

Onsite Beneficial Reuse of Ground Engineered Wood Wastes

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P.O. Box 7921
Madison, Wisconsin
53707-7921

Construction and Demolition (C&D) Debris is a widely underutilized resource that represents nearly 30% of the municipal waste stream entering Wisconsin landfills.

Large quantities of relatively clean high-value materials are disposed of in landfills, resulting in higher C&D costs and wasted resources for the industry. The National Association of Home Builders estimates that 1.7 tons of wood waste is generated during the construction of a 2,000 square-foot home.

Dimensional lumber along with engineered wood products (such as oriented strand board, plywood, wood I-joists, glue laminated timbers and laminated veneer lumber) make up a large percentage of the wood waste that may be chipped for erosion control mulch. For more information on exempt use of wood wastes, see DNR guidance document Wood Chip Exempt Use Guidance.

<http://dnr.wi.gov/org/aw/wm/publications/demolition/woodchips1-04.pdf>

How to Obtain an Exemption from the DNR

An exemption may be obtained from your local DNR office by submitting a letter requesting a low hazard exemption prior to mulching with wood-chips created from engineered wood (see definition above). The letter must contain your company's name, address, a contact person, phone number and an estimate of the amount of wood waste that you expect to use as erosion control or landscaping annually. Use the example letter provided in this fact sheet as a guide to request the exemption. The DNR may specify requirements in addition to the best management practices described in "Wood Chip Mulching for One and Two Family Home Sites" if they are appropriate to prevent potential hazards to public health and the environment.

Request for Low Hazard Exemption for Engineered Wood Processors and Users

Put this letter on company letterhead. Make sure the letterhead has all pertinent contact information, including: company name, street address, phone number, fax number and email address. If the letterhead does not contain all this information, or you don't have a letterhead, please include it in the letter.

Insert date. Address letter to (see list of regional DNR contacts):

Example for South Central Region:
Waste Program Manager
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, Wisconsin 53711-5397

Dear DNR:

On behalf of (company) I herewith request a Low Hazard Grant of Exemption from regulation for the storage, processing and/or use of ground new construction engineered wood scrap for the purpose of landspreading it as an erosion control material at new home construction sites.

Normally discarded material, such as scrap wood left over from construction projects, is a solid waste as defined in s. 289.01(33), Wis. Stats., and exemptions to allow for the recycling of low hazard wastes are allowable under s. 289.43 (8), Wis. Stats., and NR 500.08(5), Wis. Adm. Code.

I understand that the scrap wood used to make the erosion control material must not include treated lumber such as CCA-green treated wood, creosote treated wood and copper quat., nor can it be painted or finished with other surface coatings.

I further understand that any use of the wood material should adhere to the best management practice guidelines "Wood Chip Mulching for One and Two Family Home Sites" developed by the Dane County Land Conservation Department.

By receiving this exemption, I estimate that our company expects to divert approximately _____ tons* of wood waste from state landfills in the next year.

I have enclosed a check in the amount of \$550, payable to the Wisconsin Department of Natural Resources, for the permit fee. I understand that this is a one-time fee.

I look forward to your response.

Sincerely,

(sign name)
typed name, title
company name

Enclosure (check)

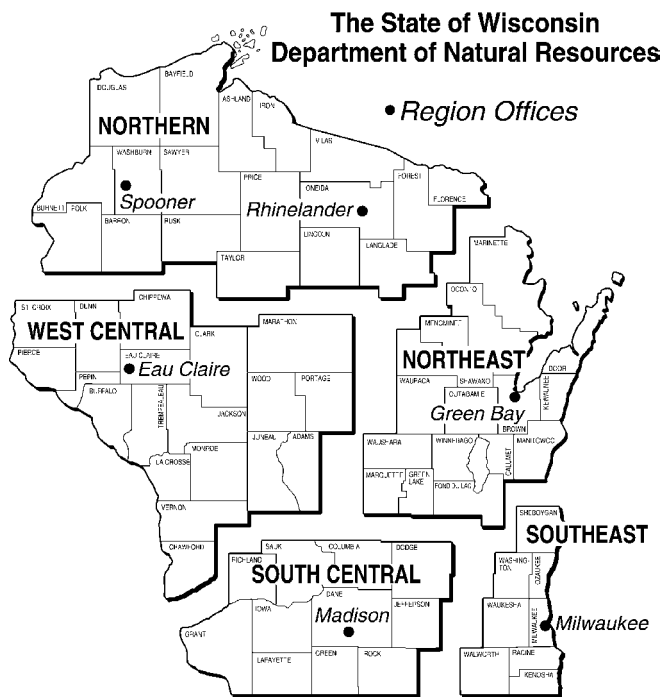
***Residential construction yields approximately 1.5 pounds of wood waste per square foot constructed in homes. Estimate the square footage you anticipate building in the next year, convert to wood waste pounds, calculate tons and enter total.**

Draft exemption letter created by WasteCap Wisconsin, Inc. in cooperation with the WI DNR. No guarantee is given or implied that use of this sample will result in a successful exemption by the WI DNR. WasteCap Wisconsin has additional information available to help recycle construction and demolition debris.

414/961-1100, wastecap@wastecapwi.org www.wastecapwi.org

How to Reach Us

For additional information on waste management requirements and recycling options, contact the waste management staff at these DNR regional offices:



- Northeast Region
1298 Lombardi Ave.
Green Bay WI 54304
920/492-5870 – Waste Program Manager
- Northern Region
107 Sutliff Ave.
Rhinelander, WI 54501
715/365-8946 – Waste Program Manager
- South Central Region
3911 Fish Hatchery Road
Fitchburg, WI 53711
608/275-3466 - Waste Program Manager
- Southeast Region
2300 N. Martin Luther King Jr. Drive
Milwaukee, WI 53212
414/263-8694 - Waste Program Manager
- West Central Region
1300 W. Clairemont Ave.
Eau Claire, WI 54702
715/839-3708 – Waste Program Manager

For More Information

For more information on similar subjects visit the DNR Waste Program website:

- <http://dnr.wi.gov/org/aw/wm/condemo/index.htm>
- or the DNR Cooperative Environmental Assistance website:
- <http://dnr.wi.gov/org/caer/cea/assistance/construction/index.htm>

To read about all state administrative codes pertaining to solid waste see:

- <http://www.dnr.state.wi.us/org/aw/wm/information/wiacssh.htm>

To access Wisconsin's solid waste rules (Chs NR 500, NR 502 and NR 518, Wis. Adm. Code), see:

- <http://www.legis.state.wi.us/rsb/code/nr/nr500.pdf>
- <http://www.legis.state.wi.us/rsb/code/nr/nr502.pdf>
- <http://www.legis.state.wi.us/rsb/code/nr/nr518.pdf>

This document is intended solely as guidance and does not include any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any manner addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

This publication is available in alternative format upon request. Please call (608) 266-2111 for more information.

The Wisconsin Department of Natural Resources provides equal opportunity in its employment, programs, services and functions under an Affirmative Action Plan. If you have any questions, please write to Equal Opportunity Office, Department of Interior, Washington, D.C. 20240.

This factsheet was published by the DNR's Bureau of Waste Management in cooperation with the Bureau of Cooperative Environmental Assistance, Construction and Development Industry Sector Specialist.

WOOD CHIP MULCHING

FOR ONE AND TWO FAMILY HOME SITES

GENERAL

Wood chip mulching is the application of chipped waste lumber (dimensional and engineered) material to the soil surface to protect it from raindrop impact and overland flow. The mulch covers the soil and absorbs the erosive impact of rainfall and reduces the flow velocity of runoff, significantly reducing soil loss from a site.

Wood chip mulch may be applied after the site has been rough graded to control erosion. It provides a temporary cover that reduces soil loss and allows vehicular and foot traffic over the area. Mulch also provides benefits to the site beyond erosion control. The wood chips form a blanket over the soil, and moderate its temperature, conserving moisture and providing an environment conducive to seed germination.

Wood chip mulching is a versatile practice that is applicable on sites where sheet flow is maintained and slopes do not exceed 3:1. It may not be used in channels or other areas where concentrated flow may occur. In these situations, erosion blankets or mats, which are more effective and may have a longer life span, should be used.

TYPES

The wood used for mulch may be a hard or softwood chipped to less than 3-inches in every dimension and shall be free of mold, sawdust, and other foreign materials. Waste lumber allowed for use as mulch includes untreated/unpainted dimensional lumber and engineered lumber such as oriented strand board (OSB), plywood and particleboard. Use of engineered lumber requires an exemption from the DNR. For information about obtaining this exemption, please refer to the end of this fact sheet. **Under no circumstances may treated wood (CCA, green treated, creosote, Copper Quat) be used as mulch or erosion control material**

ADVANTAGES

- ▶ Cost-effective
- ▶ Easy to apply
- ▶ Protect the soil surface from raindrop impact, preventing erosion
- ▶ Reduce evaporation from the soil and moderates soil temperature
- ▶ Hinders weed growth

DISADVANTAGES

- ▶ Ineffective on slopes steeper than 3:1
- ▶ Ineffective with large storm events
- ▶ May require frequent maintenance

because of the toxic chemicals used in their treatment.

Like all other organic mulches, wood chips are biodegradable. However, as wood chips degrade, they typically absorb a significant portion of the available soil nitrogen, making it unavailable for the establishing seed. Thus, depending upon the nitrogen content of the soils present on site, nitrogen fertilizer may need to be applied along with wood products to encourage the establishment of seed.

APPLICATION RATE

Mulch should be applied so that the soil surface is uniformly covered. Wood chips shall be applied at a rate of 6 to 9 tons per acre to achieve a minimum of 80% ground cover. This application should result in a layer of wood chips or wood bark ½ to 1½ inches thick.

Mulch may be applied by hand or by mechanical methods. Mechanical methods are generally much faster and more cost-effective, but may not distribute the mulch as evenly as hand application.

MAINTENANCE

Mulch shall be inspected weekly and after each storm event (including windy days) for signs of displacement and rill erosion. Necessary repairs and/or replacement shall be performed immediately to preserve effectiveness. Inspections shall continue until vegetation has been permanently established.

METHOD TO DETERMINE PRACTICE EFFECTIVENESS

Since wood chip mulching protects the soil surface from raindrop impact, it is a very effective erosion control practice. In general, when properly applied, mulching provides a reduction in soil loss of up to 88% compared to no control. (Derived by using a Universal Soil Loss Equation Cover Factor of 0.12)



Home construction site utilizing wood chip mulch for erosion control.

OBTAINING A DNR EXEMPTION

You must first obtain an exemption from DNR prior to mulching with wood-chips created from engineered wood (OSB, plywood, etc.) An exemption can be obtained from your local DNR office by submitting a letter requesting a low hazard exemption for using ground engineered wood as an erosion control material. The letter must contain your company's name, address, a contact person, phone number and an estimate of the amount of wood that you expect to use annually. An example letter developed by WasteCap Wisconsin is attached at the end of the fact sheet, along with addresses of the local DNR offices. The DNR may specify requirements in addition to the best management practices described in this fact sheet if they are appropriate to prevent potential hazards to public health and the environment.

SOURCES

1. *Minnesota Urban Small Sites BMP Manual*. Metropolitan Council. Minneapolis. 2000.
2. *Planning and Design Manual for the Control of Erosion, Sediment, and Stormwater*. U.S. Department of Agriculture, Natural Resources Conservation Service and Mississippi Department of Environmental Quality. Washington, D.C. April 1994.
3. *Mulching Fact Sheet*. Center for Watershed Protection. 1998. Center for Watershed Protection, Inc., Ellicott City, MD.
4. *Wisconsin Field Office Technical Guide*. U.S. Department of Agriculture, Natural Resources Conservation Service. Washington D.C. 1993.
5. *Illinois Urban Manual. A Technical Manual Designed for Urban Ecosystem Protection and Enhancement*. United States Department of Agriculture, Natural Resources Conservation Service. Washington, D.C. 1995.
6. *Indiana Handbook for Erosion Control in Developing Areas*. Indiana Department of Natural Resources, Division of Soil Conservation. Indianapolis. 1994.
7. *National Catalog of Erosion and Sediment Control and Stormwater Management. Guidelines for Community Assistance*. U.S. Department of Agriculture, Natural Resources Conservation Service. Washington D.C. 1996.